Dualist syntax

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Abstract

A dualist syntax has two components: (1) the lexicon, a structured set of formatives ('words'); and (2) rules for combining those formatives into utterances. This paper defends syntactic dualism against three 'monist' challenges. First, evidence for lexical argument structure can be found in deverbal nominalization, which preserves that structure systematically. Second, words represent the smallest units for idiom formation and contextual polysemy effects, which is expected on the dualist view but not if word meanings are composed in the syntax. Third, the count/mass properties of nouns suggest an interleaving of conceptual and grammatical information in semantic composition.

1 The autumnal trees of monism

Like many theories, HPSG assumes that syntax is organized into two components:

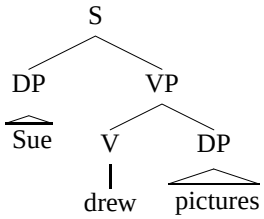
(1) a. Lexicon: A structured set of formatives ('words').

b. Combinatory syntax and semantics: Rules for combining those formatives into utterances.

I introduce the term *dualist syntax* for this grammatical architecture (cp. *lexicalism*, on one interpretation of this term). Under this dualist conception, a lexical entry contains, among other things, subcategorization information indicating the local syntactic contexts in which the word can appear. Meanwhile, the combinatory syntax and semantics specifies language-wide instructions on how to combine words, e.g. the verb precedes its object in English, but follows it in Japanese. Here's a familiar HPSG style lexical entry, followed by a tree:

(2) *draw:* $\begin{bmatrix} \text{SUBJ} & \langle \text{DP}_i \rangle \\ \text{COMPS} & \langle \text{DP}_j \rangle \\ \text{CONTENT} & \textbf{draw}\prime(i,j) \end{bmatrix}$

(3)

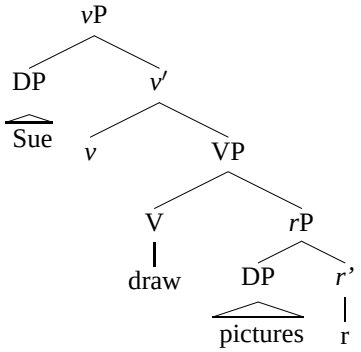


Recent years have seen the rise of certain *monist* challenges to dualism (Marantz 1997; Borer 2005a,b; Harley 2004, *inter alia*). Such approaches eschew sub-lexical syntactic or semantic structure such as semantic decomposition and lexical category specifications, positing instead that apparent sub-lexical structure is actually

built in syntax in the same process by which words are combined into utterances. Marantz (1997) sums up this challenge aptly with the slogan 'The lexicon is dead'.

On the most extreme monist assumptions, content words such as verbs are featureless radicals. Some or all thematic roles are eliminated from the lexical entries, instead assigned by silent 'light verbs' such as 'little *v*' that are assumed to occupy functional head positions in elaborate phrase structures that typically include only a few words among many phonologically empty terminal nodes. In the following simpified structure, *draw* lacks thematic roles; the silent 'light verbs' *v* and *r* assign the agent and theme roles to their respective specifiers:

(4)



To borrow an evocative metaphor (from Anthony Woodbury, p.c.), these are *autumnal trees*, with many bare branches, to which only a few words cling like dead leaves, as the winter of transformational syntax ominously approaches.

Is there a substantive, empirically testable difference between the dualist and monist approaches? My search for substantive arguments has turned up three putatively pro-monist, anti-dualist arguments in the literature. In this paper I argue that in all three cases, the facts actually favor, if anything, syntactic dualism.

2 Argument one: deverbal nominals

Certain English causative alternation verbs allow optional omission of the agent argument (5), while the cognate nominal disallows expression of the agent (6):[1]

(5) a. that John grows tomatoes

b. that tomatoes grow

(6) a. *John's growth of tomatoes

b. the tomatoes' growth, the growth of the tomatoes

In contrast, nominals derived from obligatorily transitive verbs such as *destroy* allow expression of the agent, as shown in (8a):

(7) a. that the army destroyed the city

[1]This section is based on Wechsler 2007.

b. *that the city destroyed

(8) a. the army's destruction of the city

b. the city's destruction

Following a suggestion by Chomsky (1970), Marantz (1997) argued that these data show that the agent role is lacking from lexical entries. In verbal projections (5) and (7) the agent role is assigned in the syntax by little *v*. Nominal projections like (6) and (8) lack little *v* so they lack a *structural* source for the agent role. Pragmatics takes over to determine which agents can be expressed by the possessive: the possessive can express 'the sort of agent implied by an event with an external rather than an internal cause' because only the former can be 'easily reconstructed' (from Marantz 1997; see also Harley and Noyer 2000): the destruction of a city has a cause external to the city, while the growth of tomatoes is internally caused by the tomatoes themselves (Haspelmath, 1993; Smith, 1970).

Marantz points out that this explanation is unavailable if the noun is derived from a verb with an argument structure specifying its agent if there is one. The problem for a dualist syntax is that nothing can be plausibly expected to block the deverbal nominal from inheriting the agent of a causative alternation verb.

The empirical basis for this argument is the mismatch between the allowability of agent arguments, across some verb-noun cognate pairs: e.g. *grow* allows the agent but *growth* does not. But how general is the *grow/growth* pattern? If it is the norm, as implied by Marantz and others, then this may indeed suggest that the agent role is supplied by the syntactic configuration. But conversely, if exact matches between noun and verb are the norm, and especially if the few mismatches can be independently explained, then this becomes powerful evidence for exactly the position Marantz seeks to attack. It would show that the verb does specify its agent role (or lack thereof) in the lexicon, and the noun inherits the agent if and only if the verb has one.

The facts strongly support the latter generalization: near-total parallelism between verb and noun, with ready explanations for the few counter-examples. First consider non-alternating theme-only intransitives ('unaccusatives'), as in (9) and transitives as in (10). The pattern is clear: if the verb is agentless, then so is the noun:

(9) *arriv(al), disappear(ance), fall*, etc.:

a. A letter arrived.

b. the arrival of the letter

c. *The mailman arrived a letter.

d. *the mailman's arrival of the letter

(10) *destroy/destruction, construct(ion), creat(ion), assign(ment)*, etc.:

a. The army is destroying the city.

b. the army's destruction of the city

Already this favors the dualist view. For the monist, the badness of (9c) and (9d) would have to receive independent explanations: (9c) is disallowed because a feature of the root ARRIVE prevents it from appearing in the context of *v* (Harley and Noyer 2000), while (9d) would be ruled out because the cause of an event of arrival can't be easily reconstructed from world knowledge. This implausible duplication in two separate components of the linguistic system would be replicated across all the intransitive and non-alternating transitive verbs.

What about causative alternation verbs? The claim that the *grow(th)* pattern is typical of causative alternation verbs will be dubbed *Chomsky's Conjecture*:

(11) Chomsky's Conjecture: Noun cognates of causative alternation verbs lack the agent argument.

Besides *grow(th)*, Chomsky (1970, examples 7c and 8c) cited two other examples, both experiencer predicates: *John amused (interested) the children with his stories* versus **John's amusement (interest) of the children with his stories*. But this was later shown by Rappaport (1983) and Dowty (1989) to have an independent aspectual explanation. Deverbal experiencer nouns like *amusement* and *interest* typically denote a mental state, where the corresponding verb denotes an event in which such a mental state comes about or is caused. These result nominals lack not only the agent but all the eventive arguments of the verb, because they do not refer to events. Exactly to the extent that such nouns can be construed as representing events, expression of the agent becomes acceptable.

In a response to Chomsky (1970), Carlota Smith (1972) surveyed Webster's dictionary and concluded that Chomsky's Conjecture is false: 'There are many counterexamples to this [Chomsky's] claim: *explode, divide, accelerate, expand, repeat, neutralize, conclude, unify*, and so on at length.' (Smith 1972:137) Harley and Noyer (2000) also noted many so-called 'exceptions': *explode, accumulate, separate, unify, disperse, transform, dissolve/dissolution, detach(ment), disengage-(ment)*. The simple fact is that these are not exceptions because there is no generalization to which they can be exceptions. These long lists of verbs represent the norm, especially for suffix-derived nominals (in *-tion, -ment*, etc.).

As for zero-derived nominals, many of these also allow the agent, such as *change, release*, and *use*: *My constant change of mentors from 1992-1997. The frequent release of the prisoners by the governor. The frequent use of sharp tools by underage children.* (examples from Borer 2003, fn. 13). Pesetsky (1995:79, ex. 231) assigns a star to *the thief's return of the money*, but it sounds fine to me, the OED lists a transitive sense for the noun *return* (definition 11a), and corpus examples like *her return of the spoils* are easily found.

Like the experiencer nouns mentioned above, many zero-derived nominals lack event readings, and thus reject all the arguments of the corresponding eventive verb: **the freeze of the water, *the break of the window*, and so on. Others

marginally allow event readings, and to the extent that they do, agents are possible. In my judgment, *his drop of the ball* is slightly odd, but *the drop of the ball* has exactly the same degree of oddness.

In short, the facts seem to point in exactly the opposite direction from what has been assumed by the monists. Chomsky's Conjecture is false.

Now, what is special about *grow(th)*? The answer is simple. When the noun *growth* entered the English language, causative *grow* did not exist! There was only intransitive *grow*. The OED provides these dates of the earliest attestations of *grow* and *growth*:

(12) a. intransitive *grow*: c725 'be verdant' ... 'increase'
b. the noun *growth*: 1587 'increase'
c. transitive *grow*: 1774 'cultivate crops'

Thus *growth* entered the language at a time when transitive *grow* did not exist. The argument structure and meaning were inherited by the noun from its source verb, and then preserved into present-day English. This makes perfect sense from the dualist perspective in which words have predicate argument structures. Nominalization by *-th* suffixation is not productive in English, so *growth* is listed in the lexicon. To explain why *growth* lacks the agent we need only assume that a lexical entry's predicate argument structure dictates whether it takes an agent argument or not. So even this one word, cited repeatedly in the anti-lexicalist polemics, turns out to provide evidence for dualism.

3 Argument two: sublexical scope

3.1 Two approaches to sublexical scope

Monist approaches eschew sub-lexical semantic structure such as semantic decomposition, positing instead that apparent sub-lexical structure is actually built in syntax. This move has reopened an old debate between 'Generative Semantics' and lexical decomposition, and involves some of the same phenomena as the earlier debate (Lakoff 1965, Dowty 1979). Verbs like *get*, *give*, and transitive *want* incorporate a possession component:

(13) a. John wants the car. $\leftrightarrow$ John wants to have the car.
b. John got the car. $\leftrightarrow$ John came to have the car.
c. Mary gave John the car. $\leftrightarrow$ Mary caused John to have the car.

Durative adverbials can modify the implicit "have" state (McCawley 1974; Ross 1976; Dowty 1979, *inter alia*):

(14) a. John wanted the car (for two days). (want or have for two days)
b. John got the car (for two days). (have for two days)

c. John gave me the car (for two days). (have for two days)

This suggests these sentences have an underlying semantic 'have' formative. The question is how this formative enters the picture.

On one view 'have' is in the lexical decomposition of the verb, as in (15b) for *want* (a simplified version of the analysis in Dowty 1979). The verb *want*$_1$ in (15a) takes a clausal (or controlled) complement, as in *John wants very much [for it to rain]*. The verb *want*$_2$ in (15b) is the transitive variant in (14a). Using an underspecification semantics such as Minimal Recursion Semantics (Copestake et al. 2005), we need to do little more than merely introduce the 'have' state as an elementary predication, as in (15c). This alone makes it available for durative adverbials to scope over.

(15) a. *want*$_1$:= $\lambda P \lambda x[want'(x, P)]$

b. *want*$_2$:= $\lambda y \lambda x[want'(x, have'(x, y))]$

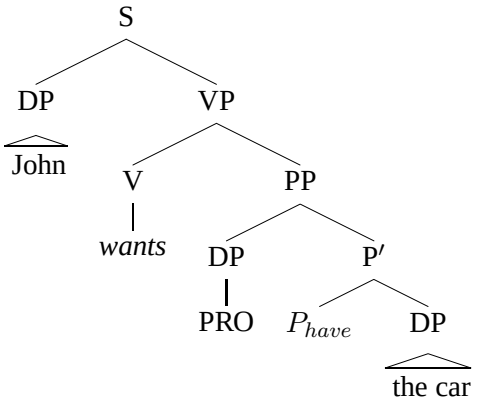
c. *want*$_2$:

$$\begin{bmatrix} \text{SUBJ} & \langle \text{DP}_i \rangle \\ \text{COMPS} & \langle \text{DP}_j \rangle \\ \text{CONTENT} & \text{s1: } \{ \text{want}(\text{s, i, s2}), \text{have}(\text{s2, i, j}) \} \end{bmatrix}$$

See Egg (1999) and Beavers et al. (to appear) for detailed formal accounts of sub-lexical scope within underspecification semantics.

The other approach posits a silent syntactic formative (McCawley, 1974), as in the analysis by Harley (2004):

(16)



Durative adverbials can adjoin to this putative PP, thus explaining the scope facts. Harley (2003) motivated the PP on the basis of controlled PP complements of *want*:

(17) John wants [PRO off the team].

Harley argued that since *want* allows this type of complement anyway, we need only posit the silent preposition HAVE.

3.2 Evidence from idioms and contextual polysemy

Which approach is right? An argument that the 'have' formative is syntactic was put forth by McCawley (1974), and more recently revived by Richards (2001) and Harley (2004). They note the parallel *verb*+DP idioms across *have*, *want*, *get*, and *give*, such as *give/get the creeps* and *give/take/get flak*:

(18) a. John gave everyone flak.

b. You get flak (when you take a stand)

They explain the parallelism by positing a single underlying idiom, "HAVE flak", which then combines with causal or inchoative semantic formatives:

(19) a. John CAUSE everyone [HAVE flak].

b. You BECOME [HAVE flak].

According to their account, the verb *have* is the spell-out of BE+HAVE, *get* is BECOME+HAVE, and *give* is CAUSE+HAVE. So the idiom parallels follow from the syntactic approach to sub-lexical scope. However, on the lexical decomposition view, the 'have' formative is embedded in a lexical decomposition (see (15a,c)) and hence unavailable to form idioms, since it is not a syntactic formative. On that view the idiomatic interpretations would have to be stipulated separately for each collocation.

In a different theoretical setting, McCawley (1974) made essentially the same argument regarding *want+DP*, an argument later revived by Harley (2004:258-9):

> significantly, the various "readings" that any *have DP* expression can have are all available with a *want DP* expression. When *have*'s complement is a DP that denotes offspring, like *daughter* or *child*, as in *John has a daughter*, *have* easily receives a 'parenting' interpretation, and this is exactly the most felicitous interpretation for the covert *have* in *John wants a daughter*. (Harley 2004:258-9)

The central empirical claim, then, is that the same idioms that can be formed from *have* can also be formed with the 'have' component of verbs like *get*, *give*, and transitive *want*. As far as I know this quite interesting empirical claim has never been explored fully and systematically, although I've taken some initial steps (Wechsler 2008). Put more broadly, the theoretical question is this: What are the minimal units from which idioms are composed?

So far, the facts support the lexical decomposition view (Wechsler (2008)). First consider the *want (to have) DP* cases discussed by McCawley and Harley. When the DP is relational as in *John has a sister*, the main predicate comes from the noun, not the verb. Simplifying somewhat, analyses along the following lines have long been proposed (Partee 1999, citing a 1987 Landman and Partee unpublished abstract; Tham 2006; Wechsler 2006; Beavers et al to appear):

(20) a. *have* = $\lambda P \lambda x \exists y [P(x, y)]$

b. *a sister* = $sister'$

c. *a headache* = $headache'$

d. *John has a sister* = $\exists y[sister'(John, y)]$

e. *John has a headache* = $\exists y[headache'(John, y)]$

Details vary but the key for now is that the same *have* appears with all relational nouns, whether *sister, headache,* etc. This analysis can be extended to the other verbs in (21):

(21) a. *want* = $\lambda P \lambda x[want'(x, \exists y[P(x, y)])]$

b. *get* = $\lambda P \lambda x[BECOME(\exists y[P(x, y)])]$

c. *give* = $\lambda y \lambda P \lambda x[CAUSE(x, BECOME(\exists y[P(x, y))]$

d. *John wants a sister* = $want'(John, \exists y[sister'(John, y)])$

e. *Eliza got a headache.* = $BECOME(\exists y[headache'(Eliza, y)])$

f. *The music gave me a headache.* = $CAUSE(music, BECOME(\exists y[headache'(me, y)]))$

Beavers et al (to appear) propose a unified analysis of relational and non-relational DP complements of these verbs of possession, citing non-zeugmatic coordination like *John has a nice car and an even nicer sister who bought it for him*. Both variants are treated as the light verb *have*, roughly (20a). In *John has a nice car*, the possession relation comes from *car*, extending Barker's (1995) analysis of genitives like *John's car*, in which the noun *car* is type-shifted to select a possessor argument. Anyway, for the present purposes, the crucial point is that we don't need many *have*'s such as a 'parenting have', 'kinship have', 'disease have' (for headaches), and so on. There is just one *have* for all relational nouns, and if Beavers et al (to appear) are right then the same one is used for true possession as well.

For the same reason, the collocations exhibiting parallelism (*get flak, give flak,* etc.) are not really idioms. They are compositional phrases involving figurative senses of the DP plus the standard 'light' meaning of the verbs. For example, *flak* refers to 'a barrage of abuse or adverse criticism' (OED), and frequently appears without any of the support verbs *get, take,* or *give* ((22a-c) are cited in the OED; (22d,e) are from the British National Corpus):

(22) a. 1968 *N.Y. Times 20 May, 46.* In spite of the current flak between Mayor Lindsay and...the...administrator of Boston and New Haven..., the potential for the city is unlimited.

b. 1969 A. LURIE *Real People, 163.* Well, all right. So why all the flak?

c. 1976 T. STOPPARD *Dirty Linen, 25.* Isn't that going to cause rather a lot of flak in the... P.L.P.?

d. Just imagine the flak flying about if we have bad results.

e. I expect the flak. If we get beat, it's my fault

In short, collocations like *get flak* are no more idiomatic than *get criticism*. Similar comments apply to the other putative idioms that distribute across support verbs.

On the other hand, English has many truly non-compositional idioms. Crucially, they do not exhibit this parallelism across support verbs. For example, *have a baby* on the 'give birth to a baby' meaning does not transfer to the other verbs, as shown in (23) (from Wechsler 2008).

(23) a. Natalie doesn't want to have a baby, so she's going to adopt one.

b. #Natalie doesn't want a baby, so she's going to adopt one.

As shown by the contrast in (23), the phrase *want a baby*, in contrast to *have a baby*, is general with respect to the ways of satisfying this desire. This phrase is not ambiguous between 'want to give birth to a baby' and other possibilities such as adoption.

Many more idioms can be added to this ((24a,b) are from McCawley 1974):

(24) a. I had a ball. ('enjoyed myself')
*I want a ball.

b. I had it out with Fred. ('argued angrily')
*I want it out with Fred.

c. C'mon, have a heart and give my kid an A. ('be compassionate')
*I don't want a heart, and besides, he flunked the exam.

d. The okra is ready. Go ahead, have at it! ('do something heartily')
*But I don't want at it! Yuck!

e. I've been had! ('cheated')
(*)I've been wanted! ('someone wanted to cheat me')

f. He had it away with his mistress. (had casual sex with'; Brit. dial.)
*He wanted it away with his mistress.

g. I'll 'ave you! ('beat you, exact revenge on you'; Brit. dial.)
(*)I want you!

h. Don't have a cow, man! ('have an extreme reaction'; Bart Simpson)
(*)What if I want a cow?

As shown by these examples, true idioms do not extend from *have* to *want*.

More research is needed before we can generalize confidently from such data, but there seems to be a discernable trend: Words represent the smallest level of granularity for idiom-formation and contextual polysemy effects. The sublexical formatives evidence by adverbial scope facts do not show contextual polysemy or form idioms. Assuming for the sake of argument that this is a valid generalization, then it has important implications for the dualist versus monist controversy. Namely, this generalization is predicted on the dualist view, but not the monist view.

3.3 Syntactic evidence

Different phrase structures are posited under the dualist analysis (25a) and Harley's (2004) monist analysis (25b).

(25) a. Dualist analysis: John wants [a lollipop]$_{DP}$.

b. Monist analysis: John wants [PRO P$_{HAVE}$ a lollipop]$_{PP}$.

There is considerable syntactic evidence favoring the dualist structure.

First, the history of English undercuts the original motivation for the controlled PP (recall (17) above). The earliest attestations of *want* actually took a DP object, with the meaning 'lack' (c1200). From 'lack' it drifted to 'desire'; and started taking infinitive complements (1706). (It's not clear which of these two happened first.) It was not until 1836 that we find directional PP's and particles as in *I want in, I want in* (OED example). It is anachronistic to cite the PP complements as the basis for DP complements, when the PPs were a very late innovation that showed up at least 500 years after the DPs. Also, these PPs were, and still are, rather specialized for indicating implicit motion, as the OED notes. We cannot say **I want in Austin* to mean 'I want to be in Austin.' But the *want+DP* cases never involve motion.

The want+PP pattern is found in other Germanic languages. This 'go-deletion', as it is sometimes called in Swedish grammars, is independent of the *want+DP* pattern. Like English *want*, Swedish *vilja* 'want' allows go-deletion but not DP objects (26), while *önska* 'want, wish' allows DP objects but not 'go-deletion' (27). Both allow infinitives:

(26) a. Jag vill äta middag.
I want eat.INF dinner
'I want to eat dinner.'

b. Jag vill hem / in i rummet.
I want home / into in room.DEF
'I want (to go) home / into the room.'

c. *Jag vill en ny bil.
I want a new car
('I want a new car.')

(27) a. Jag önskar att åka til Tyskland.
I wish to travel to Germany

b. Jag önskar en ny bil.
I wish a new car

c. *Jag önskar hem / in i rummet.
I wish home / into in room.DEF

So the want+DP pattern and the 'go-deletion' pattern do not correlate either historically or across closely related languages, suggesting that the two patterns are unrelated.

Secondly, *want* passivizes, suggesting it takes a DP direct object and not a PP: *The war was not wanted (by anyone).* English sometimes allows 'prepositional passives' like *Mary was being stared at*. But these are rather poor with controlled PPs: **??The team was not wanted off (by anyone).* This contrast is expected on the dualist structure but not on the monist structure. Similarly, adjectivalization is possible only for the DP taking verb: *an unwanted war* versus **an unwanted off of team* or **an unwanted into house*.

Harley (2004, p. 264, footnote 8) notes another problem for the PP analysis: an overt NP can replace PRO in the go-deletion type PP (28a), but not in the putative PP structure posited for the DP complements (28b,c):[2]

(28) a. John wants Bill/PRO off the team.

b. *John wants Bill a beer.

c. *John wants [Bill P_{HAVE} a beer]$_{PP}$.

Next, if the apparent DP complements of *want* are really PPs, then they should coordinate just as well with (uncontroversial) PPs as with other DPs (the latter would be covert PPs). But coordination with PPs is almost impossible, as predicted by the Dualist Analysis:

(29)	a. I want [a vodka martini] and [a hot bath].	DP+DP
	b. I want [out of these wet clothes] and [into a hot bath].	PP+PP
	c. *I want [out of these wet clothes] and [a martini].	*PP+DP
	d. *I want [a martini] and [out of these wet clothes].	*DP+PP

On the monist analysis all of the bracketed phrases in (29) are PPs, making it mysterious that (29a,b) sound so much better than (29c,d).

English infinitival relative clauses allow pied piping of PPs (30a) or the fillerless bare (or 'simple infinitival') type (30b), but disallow DP fillers (30c).

(30) a. a bench [on which]$_{PP}$ to sit ____

b. a bench to sit on ____

c. *a bench [which]$_{DP}$ to sit on ____

If the complement of *want* were a PP as claimed then it should be possible to relativize it in infinitivals, but it is not:

(31) a. a reasonable type of bike to want ____ for commuting

[2]Harley (2004, p. 264, footnote 8) floats an idea for solving this problem, which will not be discussed here for lack of space.

b. *a reasonable type of bike [P$_{have}$ which]$_{PP}$ to want ____ for commuting

c. a reasonable sort of outcome to wish for ____

d. a reasonable sort of outcome [for which]$_{PP}$ to wish ____

On the putative PP structure shown in (31b), the contrast with (31d) is mysterious.

In contrast to PP complements, direct objects famously resist separation from their verb by an adverb (32a,b). Once again, we find a clear contrast between DP complements of *want*, and true PPs (32c-f):

(32) a. He nibbled quietly [on the carrot].

b. He nibbled (??quietly) [the carrot].

c. He wants desperately [out of his job].

d. He wants (??desperately) [a better job].

Yet another property distinguishing PPs from DPs is modification by *right*:

(33) a. So you bring this poor dog in from the rain,
Though he just wants right [back out]$_{PP}$. (Metallica)

b. *He just wants right [a rapid exit]$_{DP}$.

Covert HAVE was originally proposed to explain the scope of durative adverbials (14) in terms of adjunction. But (33b) shows that putative PP constituent does not allow modification normally permitted for PPs.

Harley (2004), citing McIntyre (2002), argued for the monist analysis on the grounds that neither *have* (34a) nor *want* (34b) is a particle shift verb:

(34) a. He had { his jacket off / *off his jacket }.

b. The doctor wants { those clothes off / *off those clothes }.

The idea is that parallel constraints on the local syntactic environment of the two verbs can be explained by positing a silent HAVE in both. In my personal judgment, shifting is better in (34a) than (34b), and the former can be found on the web, for what it's worth: *'A fox,' he gloated to the housekeeper once he'd had off his coat.* (www). Moreover, with other particles the contrast is much sharper:

(35) a. He had { his jacket on / on his jacket }.

b. He wanted { his jacket on / *on his jacket }.

A check of the British National Corpus turned up many hits like (35a) for the string *[pers. pron.] had on [poss. pron.]*, but none for *[pers. pron.] wanted on [poss. pron.]*. With regard to particle shift, the two verbs are not parallel after all.

Finally, *want* can coordinate and share its object with other transitive verbs, as in *The bear wanted, got, and ate it.* (We know this is V-zero coordination and not right node raising out of coordinated VPs because right node raising is not

possible with unstressed pronouns like *it*.) Such coordination is expected if all these verbs select DP, but it is problematic if some select PP and others DP, since the complement *it* cannot be both at once.

My arguments above focus specifically on the covert PP analysis from Harley (2004). But in a broader sense these arguments are completely general. For example, suppose we try to rescue the syntactic (monist) analysis by replacing the PP with an outer DP shell.[3] Hence the PP in (25b) would be replaced by [PRO HAVE [a lollipop]$_{DP_1}$]$_{DP_2}$ (the numbers in DP1 and DP2 have no formal significance and are for identification only). The idea would be that DP2 has the same category label (namely DP) as any other DP, so on this view we would expect *a lollipop* to have the same syntactic properties, regardless of whether it is the object of *want* or in some other context such as *The dog ate a lollipop*— which is what I showed in this section.

But the whole point of the syntactic analysis is that DP2 differs syntactically from other DPs. If they are truly identical then the extra structure for the outer DP2 shell, as well as PRO and silent HAVE, are merely graphical decorations with no syntactic interpretation. On the other hand, if the syntactic representations really differ then it should be possible to demonstrate that difference empirically. The arguments above support the conclusion that there is no difference and that therefore the syntactic analysis is wrong.

4 Argument three: count and mass nouns

Our last case study concerns Borer's (2005a,b) particularly strong statement of the monist theoretical perspective. Borer distinguishes two types of formatives, *listemes* and *f-morphs*. Listemes, which are content words such as nouns, verbs, and adjectives, have no grammatical features. As far as the grammar is concerned, they are pure atoms, without subcategorization frames, argument structure, lambda abstracts, part-of-speech category such as N or V, or minor category features such as count versus mass noun. A listeme is associated only with an agrammatical conceptual representation. Borer (2005a:11) submits that there is

> no direct interface between the conceptual system and the grammar, in that properties of concepts do not feed directly into any determination of grammatical properties. A substantive listeme is a unit of the conceptual system, however organized and conceived, and its meaning, part of an intricate web of layers, never directly interfaces with the computational system.

In contrast, f-morphs, which are functional morphemes such as plural inflection, determiners, numerals, and classifiers, do have grammatical features. For Borer, the grammar (or 'computation') deals in rigid, categorical values, while the conceptual system is highly malleable and subject to contextual factors. This leads her

[3]This was suggested by a member of the audience at Wechsler (2008).

to the interesting prediction that in conflicts between the two, it is the concepts that stretch to fit the exigencies of the grammatical construction. Let us consider her illustration of this point, an analysis of the count/mass distinction.

By way of background, traditional grammars often distinguish count nouns such as *suggestion* from mass nouns such as *advic*e, with respect to whether they allow plurals (*suggestions; *advices*), indefinite articles (*a suggestion; *an advice*), quantification by *too much* (*??too much suggestion; too much advice*), and *one*-anaphora (*John gave me (some) suggestions and Mary gave me one too.; *John gave me (some) advice and Mary gave me one too*). However, it has long been noted that nouns of one type can often be forced into the other type:

(36) 'grinding': count noun ⇒ mass noun

a. Jonas is eating a banana. (count)

b. There's too much banana in this cake. (mass)

(37) 'portioning': mass noun ⇒ count noun

a. I drank too much beer last night. (mass)

b. Would you like a beer? (count)

In detailed lexicalist analyses, Copestake (1992) and Copestake and Briscoe (1995) analyze this as *systematic polysemy*, in which a class of words productively alternates between systematically related senses. Copestake and Briscoe (1995) generate the sense extensions with productive lexical rules: a 'grinding rule' converts a count noun into a mass noun, while a 'portioning rule' applies in the opposite direction. This analysis is very detailed and sophisticated, combining Krifka's (1989) mereological account of nominal reference with Link's (1983) treatment of plurals, and carefully addressing the empirical question of the scope and productivity of various sense extension rules: for example, whether there is a special 'animal-grinding' rule deriving a mass noun referring to the meat or flesh of the animal denoted by the corresponding count noun (e.g. *too much chicken*), or whether it should be subsumed under a more general grinding rule. My sketch of this work does not do it justice but it will suffice to illustrate the basic strategy and the form of the grammatical theory under a lexicalist approach.

On Borer's monist theory, words like *banana* and *beer*, like all listemes, are grammatical atoms. So they cannot be distinguished by a count / mass lexical feature; nor does Borer allow for lexical rules or coercion. All noun type listemes denote masses. Instead of coercion, the f-morphs themselves impose structure on these listeme-denoted masses: *divider* f-morphs (e.g. plural inflection) portion out the mass into countable entities; *counter* f-morphs (*several, two, there*, etc.) count out portioned entities; and some f-morphs (*a(n), one, each, every*) perform both functions at once.

Since all listemes start out as masses, the grinding function is eliminated entirely, with mass interpretations simply arising in the absence of a divider f-morph. A seemingly 'coerced' phrase like *three waters* ('three portions, e.g. glasses, of

water') has the same grammatical analysis as *three cats*. It is the plural morpheme itself that does the portioning, with pragmatics and world knowledge determining that the appropriate portion of cat-mass is an individual cat, while the appropriate portion of water-mass depends on context, e.g. a glass of water in one context, a kind of water in another.

While the coercion of listemes between count and mass is fairly free, Borer observes that the addition of a divider morpheme makes an expression more resistant to coercion. Hence *There's too much rabbit in this stew* sounds much better than **There's too much rabbits in this stew*. For Borer, **too much rabbits* is ruled out by the grammatical computation as a clash between the $[\pm Divider]$ and $[\pm Counter]$ features of the f-morphs $[plural]$ and *much* (Borer 2005a:104ff). Such examples illustrate 'the complete impossibility of coercibility, or type-shifting, whenever the noun in question is marked by means of overt inflection.' (Borer 2005a:105)

Borer's argument goes as follows: on a lexical coercion account, if we can coerce *rabbit* into a mass, then why can't we coerce *rabbits* into a mass? Pluralia tantum nouns provide Borer with a particularly striking evidence since 'just like regular plurals, they cannot be coerced into a mass context' (Borer 2005a:105, ex. 26b): **There's too much scissors around this house.* Thus the malleability observed in rich conceptual representations should not be captured in grammatical coercion rules, nor indeed in the grammar at all, because the grammar proper is not susceptible to coercion. Borer's theory explains this observation by keeping the computational grammar radically insulated from the effects of such conceptual representations.

Let us assess this argument. Assuming, as seems reasonable, that some words are more semantically malleable than others, then in conflicts the malleable ones will stretch more than the rigid ones, and a clash between two rigid ones will sound worst of all. And ungrammaticality due to errors of 'agreement' between formal grammatical features have a more pronounced quality than what results from semantic incompatibility.

The question is whether this interaction between malleable and rigid semantics justifies the radical separation that Borer advocates. As it turns out, f-morphs like plural actually *can* be coerced into masses:

(38) How much refried beans / chopped nuts / scrambled eggs / mashed potatoes / mashed yams were consumed yesterday?

A listeme like *chopped* converts a plural like *nuts* into a mass, which therefore accepts the mass quantifier *much*. Interestingly, chopping doesn't seem to help examples like **too much chopped rabbits*, perhaps because a single rabbit is large enough to provide a reasonable amount of rabbit meat for a stew (cp. *#too much chopped nut*). Examples like (38) show that the computation and conceptual representations are interleaved in semantic composition: first the plural *-s* (an f-morph) applies to the noun, indicating more than one unit; then *chopped* (a listeme) converts it to a mass; and then *too much* (an f-morph) measures the amount of that

mass. This seems to be contradict Borer's basic supposition that computational grammar— in this case the $[\pm Divider, \pm Counter]$ feature system— is blind to the rich conceptual properties of listemes.[4]

As for pluralia tantum nouns, a subset of them actually do appear with mass quantifiers (Copestake (1992:98), Sag et al (2003:124–5)): cp. *How much feces / grits / collard greens / clothes are there?*

So the radical separation between conceptual and grammatical systems seems unwarranted. Still, the lexicon may not be the right place for all mass-count conversion. For example, consider the 'beverage portioning' rule that allows us to order *two waters*, but not to point out a puddle by saying **There's a water on the floor*. Beverage portioning is not (only) lexical: one could order *a Stoli and kiwi juice, please*, where *Stoli and kiwi juice* is a conjoined phrase produced by the syntax.

Let us posit that a concept has some structure, including preferred *Individuation Units* (IUs). If the concept is a word meaning, then its structure *ipso facto* becomes lexicosemantic structure. The phrase *two beers* draws its IUs either from the conceptual representation of 'beverage' (the IU is roughly a serving, as in *two beers, please*) or, since beer is found in many varieties, another IU is 'kinds' (*They serve two beers that I like*). If a concept lacks any potential IU's at all, then it can never appear in count noun contexts: this may be the case for the concepts denoted by the words *evidence, furniture,* and *clothing*. This approach captures the positive aspects of Borer's approach. But it crucially rejects the monist principle of grammar-free words, since syntax and compositional semantics refer directly to (the IUs within) the conceptual representation of words.

In addition, there is important evidence that count versus mass is also a *formal* feature of at least some nouns: nouns preserve their count/mass-dependent distribution even when they denote kinds (Krifka 1995).

(39) What do you value most in life?

a. Flattery. / Advice. / Evidence. / Fruit.

b. *Compliment. / *Suggestion / *Clue. / *Vegetable.

These NPs refer to the kinds or concepts themselves, not to particular specimens, so there is no question of portioning by f-morphs. This would seem to require a lexical feature, presumably a simple grammaticalization of the conceptual representation, produced by a rule stating that a noun denoting an IU-less concept is marked as a mass noun. The concept 'flattery' lacks IUs, so the word *flattery* is classified as a mass noun and thus can appear in singular form without a specifier, as in (39a).

Summarizing, we saw from cases like *too much chopped nuts* that functional and content morpheme meanings are interleaved in semantic composition. Some aspects of the count/mass split should perhaps be pushed out of the lexicon proper into pragmatic conceptual structure, but then noun syntax is crucially sensitive

[4] If it turns out that such examples are not problematic for Borer's theory, then I no longer know what the theory actually predicts.

to that structure. Moreover, at least some nouns lexicalize grammatical features reflecting their conceptual structures.

5 Conclusion: the autonomy of the lexicon

The old Generative Semantics idea of generating sublexical semantic structure along with the compositional semantics of sentences has been revived in recent years. But the attempts to support this approach have back-fired. First we saw evidence that lexical argument structure is autonomous from the syntactic expression of it: deverbal nouns preserve the argument structure of the cognate verbs (contrary to what is often claimed), but systematically differ in syntax. Our second case study reached the tentative conclusion that word meaning is the smallest unit for contextual polysemy. Sub-lexical semantic formatives, even those available for some adverbial modification, are unavailable for forming idioms with surrounding words— a problem for monist approaches that treat such formatives as if they were words. Finally, the mass/count distinction fails to support Borer's notion of a computational syntax hermetically sealed off from the vagaries of conceptual knowledge. The available evidence still supports a dualist syntax comprising two components: *words*— which are interfaces between conceptual representations and grammatical subcategorization instructions— and the *combinatory rules* that abide by those grammatical instructions.

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